

August 14, 1970

Dr. Ivan L. Bennett, Jr.
The President's Science Advisory Committee
Executive Office Building
Washington, D.C. 20506

Dear Ivan,

I am happy to respond to your questionnaire which bears the improbable date of 11 March 1970. I have probably been remiss in replying tardily if at all to some other communications along this line, I can assure you not out of any lack of interest in the subject. Besides my topical reply I am also enclosing some material that I have published on the same question of the best utilization of the BW facilities.

1. If our existing programs and research in epidemic disease were really ample in relation to the task we might need only a small additional effort to cope with problems of infection arising from human malice. In my view they are already on a totally inadequate scale and I would put it to you that pure luck was the main ingredient to have prevented recent outbreaks labeled Marburg and ~~Hansa~~ ^{Ebola} from having grown into catastrophies. L. B. G.

Our risks are then compounded by the possibilities of malicious interventions. I will assume for the moment that the international community even including China will in due course subscribe to a BW control treaty along the lines of the UK draft convention. Nevertheless, we can have less than perfect confidence that every other country will follow its proscriptions as meticulously as we will be obliged to do. It would add a further temptation to clandestine violations of such a treaty if we and other countries failed to maintain an effective defensive posture in this field. There is on the other hand the considerable risk, as you also mentioned, of misinterpretation of any BW-related work, even if substantially as well ^{as} assertedly defensive, and we must avoid at all costs re-establishing mutual fear and mutual escalation of activity in this field. However, I believe we can establish a pattern of extensive, opened research in BW defense, preferably on an international basis, which will have the important byproduct of discouraging clandestine work elsewhere. In my CCD paper I also enlarge on the role of such cooperation for "implicit verification".

A point I do not wish to enlarge upon publicly but which should be an important motive for developing a defensive facility is our very serious vulnerability to insurgent BW. We can anticipate an increasingly intense revolutionary climate during the next twenty years and this is just the time scale that our facilities planning should be anticipating.

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I had tried to go into this with Joe English when he was Head of HSMHA and found that the responsible officialdom was getting technically superficial and incredibly optimistic accounts of the robustness of our civil defenses against such attacks. Super-chlorination will solve everything it seems! You and I know better.

This problem should not be regarded as confined to human disease and the sabotage of agriculture is for reasons quite transparent to you and even more attractive possibility for inter- as well as intra-national conflict. Even the meanest mercenary motives might come in to tricks that would influence the commodity future's market! You may know that *offeee* rust, formerly endemic in Africa, has now suddenly appeared in Brazil!

All the foregoing remarks apply specifically to biological agents rather than toxins. From almost any point of view except the credibility of the implementation of BW arms control toxins have to be dealt with together with other chemical weapons. However, toxins are conceivably more readily accessible to a guerilla group than, say, nerve gas (until some is stolen from an army base!) and they might have a special appeal to the semi-psychotic mind. Furthermore, I expect that there will be more scientific discovery in toxin-related fields that is likely to add to our potential concern about the availability of toxins for domestic insurgency. However, much the same might be said about other chemical agents and the issue can be left under that heading.

2. I believe that work specifically directed at defensive measures should be concentrated in government laboratories. This would facilitate the development of specific international arrangements; it would also allow for better political communication with the agencies responsible for public health and civil order. However, grants and contracts on specific scientific issues related to these questions could undoubtedly be handled the most competently in various university laboratories but at that point they would be hardly distinguishable from other inputs for environmental health.

3. I think that defense-related research is a problem on many campuses and this is indeed another reason to have a government facility. Furthermore, the defensive work will have to take account of a lot of political and operational details in, for example, the protection of public water supplies and all of this is best handled centrally.

4. I am not prepared to give a brief answer to this question. I think it is one that will have to be dealt with very searchingly by a civilian advisory board to the new facility. There is the problem of self-fulfilling expectations of sources of harm being generated in the very process of investigating the defenses. A related question that I am somewhat conflicted about is whether, for example, the amino acid sequence of a potent toxin, or especially a small active fragment thereof should be made classified information or whether there is some other way to prevent it from being turned into mischief. I in fact assume

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that a fair amount of information along these lines is classified at the present time and would be quite happy to leave it there until we have worked out some effective mechanisms for dealing with it.

5. This is a very naughty problem. I think it would be unwise to commit ourselves in advance to maintaining a zero level of unclassified work in BW defense. On the other hand, we need to find some way to providing credible assurances that it really is defensive and perhaps the buffering by some reputable civilian group might do the job. I think at the very least that the overall scope and even general directions of such classified work should be publicized by the buffer group. The reason we may need to retain some classified research capability is simply to be able to react appropriately to intelligence information on BW development elsewhere as part of the enforcement and verification procedure. However, it would be very easy for such a program, if it is efficacious at all, to get out of hand and we might be just about as well off if we did not have any classified laboratory work. This would not necessarily preclude the utilization of some investigators, having been appropriately cleared, as consultants to a non-laboratory intelligence activity and even the factoring of inputs from intelligence sources into the selection of research topics. As long as the laboratory and the research itself is quite open I think we can appear with clean hands. However, I may have overlooked some important considerations here and a flexible approach to this problem is probably desirable and could be dealt with as I have indicated in my response to 4.

I would like to suggest that serious consideration be given to delegating some operational responsibilities for this kind "peace research" to the Arms Control Agency. HEW is not particularly well equipped to deal with the essential inter-national aspects of this problem and I believe it would also mute the international political impact of our making arrangements with other countries for cooperative defensive research if it were to be simply blended in with other health activities. Furthermore, I do not believe that this should be simply charged to the general health budget since our costs in this area are very closely connected with our national security and our general posture in foreign affairs.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

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